DOCUMENT RESUME

ED 042 970 AC 008 554

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TITLE	The Future Shape of Permanent Education.
INSTITUTION	Council of Europe, Strasbourg (France). Council for Cultural Cooperation.
PUB DATE	Jun 70
NOTE	19p.; Studies on Permanent Education, No. 15
EDRS PRICE	EDRS Price MF-$0.25 HC-$1.05
DESCRIPTORS	*Adult Education, *Continuous Learning, *Educational Change, *Educational Philosophy, *Educational Planning
IDENTIFIERS	*Europe

ABSTRACT

Continuing education in Europe will require constant renewal, democratic feedback, and personal flexibility. In its future form, it might begin with basic education as a foundation for vocational education, which in turn would evolve into forms of further training, refresher training, and retraining in keeping with the ideal of a dynamic, free society. A comprehensive system is needed which gives each individual opportunities for lifelong education suited to his talents, wants, and needs. Guidance and evaluation must also be improved. Finally, Europe will need an integrated continuing education system based on advanced technology. (LY)

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PERMANENT EDUCATION

FUTURE SHAPE

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ED 042970

STUDIES ON PERMANENT EDUCATION

No. 15/1970

THE FUTURE SHAPE OF PERMANENT EDUCATION

by

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DECS 3/DECS 6

STRASBOURG, JUNE 1970

16.702
04.3/51.03

Introduction: Society as a functional system

We suggest that the modern social order should provisionally be regarded as a purely functional system.

This hypothesis is certainly not free from value judgments. The illusion of absolute measurability and of freedom from judgments of this kind is the cause of much mischief in modern sociology and educational theory. But of course we must proceed from some assumption which is as impartial and objective as possible. The significance and purpose of a functional social order lies in the fact, firstly, that it is in constant change, or more exactly in a complex situation of constant changes and, secondly, that these changes interact on each other with as little friction as possible: the system functions and is therefore "functional".

If we ask ourselves what this has to do with education, we must straight away reply that education is the motive power of the system. Education sets society moving and keeps it moving. It provides the dynamic force, which operates in the economic, social and cultural fields at the same time. If one of these three components is neglected or denied, then the other two suffer. The system becomes dysfunctional and declines. If the enquiring mind is the instigator of movement, the originator of all economic progress, of every social transformation, every cultural upheaval and uprise, then preservation of the status quo signifies decline. Order, therefore, is not static, it belongs to the same category as movement.

It is in the change. Standing still, lingering, resting and all forms of torpor bear the stamp of anarchy. Death is as it were, the most complete form of anarchy. All our efforts, which we must constantly increase and accelerate, tend in this direction. Acceleration is for us a sine qua non and also a death wish. The traffic goes on moving, more and more smoothly, and order reigns; but when something holds it up - and a slight "accident" is enough - anarchy soon spreads.

Some time ago traffic safety authorities propagated a sound slogan: Driving a car is a matter of personality. A slight mistake, a moment's inattention, some tiny case of unprincipled behaviour, some physical, mental or moral shortcoming or lapse leads to an "accident": to a dysfunction and the collapse of the system.

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Education in the modern sense might then, in a grossly over-simplified way, be described as "road safety instruction", the social order being as already explained, a functional system regulating human traffic. Education is not only the motive power but also the steering mechanism of the system.

It is obvious that it merits our special attention. Our "road safety" depends on its being thoroughly and constantly overhauled. It has become both absurd and dangerous to attempt to govern ex cathedra. The point at issue is indeed the peaceful control and direction of tremendous mass energies. Now that humanity is threatened by the possibility of total self-destruction, wars of any kind are dysfunctional either potentially or in fact. Extermination as a means of purging the social system has become impracticable, as it leads to the system's collapse. Man's evolution has as it were reached the limits of Darwinism. Charity becomes a factor in the self-preservation instinct: an idea, an illusion, a piece of hypocrisy is being turned into a functional element. Charity must become not only a functional but also an operational part of democracy. The alternative is total self-destruction, or else then the most refined, if not the most brutal, form of slavery mankind has ever known.

This introduction is not intended as a fundamental idealogy for educational policy. But it may be regarded as a point of departure for an attempt to describe an adequate model for educational planning and organisation as part of the functional system of a dynamic social order.

I. New demands on education

The model in question bears the very often misunderstood or over-hastily interpreted designation: "permanent education". What we shall now do is to deduce from the basic assumptions of our general introduction an admittedly incomplete and imperfect list of the requirements which the model must meet. There are few people nowadays who do not realise that our traditional school systems were designed for a social order which belongs to the past and that, in spite of all attempts to adapt and improve, they achieve less and less of what our modern and more rapidly developing society demands of them. It therefore appears reasonable to begin with a pragmatic formulation of the question: what must our new educational system look like and what must it achieve in order to fulfil the requirements of the present generation and future generations of society? Basically this also raises the issue of the functionality and purpose of the system and the aim of education in general.

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It is here, even more than, for example, in the economic sciences, that futurology gains significance. All educational policy is by necessity long-term. It is subject to the laws of long-term planning, for the simple reason that its results and effects become apparent and tangible only with a change of generation. That is why it is not sufficient to take contemporary society as a pattern. Planning for education is therefore a form of planning for the future; educational research becomes simply the creative element in futurological research.

In venturing to draw up a very provisional list of requirements we are joining, rather casually and empirically, in an extremely complex and interactive process. Each individual requirement must be deduced with the utmost consistency from recognisable trends while at the same time being as purposefully imaginative as possible; for every one of them is both an element in analytical planning and an instrument of political will. The most consummate strictly mathematical planning is fruitless unless it is the expression of strong and single-minded political resolve. But even such resolve is pointless if its goals do not lie in the future.

1. Continuous renewal

The first requirement is therefore that objectives be constantly reviewed. This implies the automatic revision of plans on the strength of research results. Theoretically speaking, the model is organised in concentric circles. Research lies at the centre. Its findings must be subjected progressively to central programming and immediately channelled into curricula development on various levels: at present they are frequently not applied in education until they are already obsolete. Only electronics can ensure that research centres exercise such a direct influence as is relevant to the different fields of learning from the universities to the nursery schools. The individual information channels must be co-ordinated with each other as closely as possible and opportunities must exist in all fields for feedback, in order to make the results of practical experience accessible to researchers and, above all, to programmers. Here we touch on the second requirement.

2. Democratisation

Our new educational systems must be comprehensive and coherent. They must cover all age groups and social classes in such a way as to provide an integrated range of courses, meeting the greatest possible number of individual needs. Courses will no longer be "one way streets". Notwithstanding the side roads that are always open, a heavy flow of traffic must be possible in the opposite direction. This opposite

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flow, in an organised form, is what in cybernetics is called feedback. Politically speaking, this is a democratic process which enables each individual user, each individual member to influence the system. The unregulated form of the process has on recent occasions, come to be called "protest". It is not by chance that the protest has come from students and not from teachers, from those who wish to establish or not to establish themselves and not from those who are already established; in other words from those who are seeking and those who refuse to seek, but not from those who think they have already found and therefore no longer need to seek. This leads us to the third requirement.

3. Continuous effort

As the system of permanent education rests on the principle of a mobile social order, it demands from each member of society constant physical, mental and emotional mobility, so to speak. In order to temper the dismay which may beset us at the thought, one might also say that the realisation of this aim depends on constant endeavour on the part of each individual to cultivate himself, that is to say the whole man. Everyone must, as it were, be and remain a seeker. Each individual's whole life thus becomes an experiment lived with increasing awareness. And all these experiments are currents and cross-currents within a fluid social order which is constantly revising its own standards.

II. A break in cultural history

A very rough historical comparison shall make it easier for us to understand the present and the future. In pre-functional, pre-technological, para-Darwinistic eras there existed certain cultural ideals, what may be called ideologically preconceived images of the world and mankind which frequently originated in aspirations to power on the part of specific groups or social classes. To every such ideal there corresponds a static social order with fixed, universally valid scales of values. Probably the last of these comprehensive cultural ideals was the "Encyclopédie", a kind of profanation, and thereby "reductio ad absurdum", of a "summa theologiae". It would of course be very naive to think that such times are gone for ever. History is always present, but naturally only partially in any one place, never completely and absolutely present anywhere. But we are seeking a global order; indeed, we must do so, for the survival and progress of humanity depend more than ever today on such an order. What then is the use of an ideal whose potency is only partial?

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This alone is a justification of the functional concept of society. Contemporary educational theory is thereby forced to abandon any claim to a generally valid cultural ideal. Thus the distinction between educated and uneducated disappears, and with it reason for discrimination against the uneducated. And so, on the threshold of permanent education, we find ourselves to some extent at a new beginning (i.e. at a primitive state) in educational history, for we no longer know what education means. There is no longer any commonly held, sacrosanct opinion about education, and every attempt to resist the anti-paternalistic trend is dearly paid for, because it is mainly the meek and the weak that we hit; in the final analysis we miss the real spirit of the movement, which then has to revolt even more violently - with luck against itself, but otherwise against the tyranny of a petrified scale of values, the only alternative to which is anarchy.

We are speaking only of educational and cultural anarchy, of which there are an appalling number of symptoms. Though it might still be at the creative stage at present, such anarchy may tomorrow turn into a hopeless state of disorganisation of western society.

If we wish to halt this we must make a completely fresh start at this new beginning in European educational history to which we have referred.

III. <u>The new shape</u>

This brings us face to face with the very concrete question what form this new beginning can, should and will take, in accordance with the three categories of futurology: what is possible, what is desirable and what is probable.

I shall start with a very simple, general outline and attempt to sketch out the shape of permanent education with the help of the following sub-division (into non-chronological categories):

1. Basic education,

   forming the common trunk of

2. Vocational education,

   which would evolve into

3. Recurrent education (further training, refresher training, retraining)

   which would develop from the

4. Shaping of life to a cultural pattern.

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1. Basic education includes and combines what has so far been known as pre-school education, primary or elementary and lower secondary schooling. There are no hard and fast age-limits. Whereas it can normally be completed at the age of 12-14 it will in individual cases extend beyond this; in some cases it may even have to be resumed at a later stage, whenever shortcomings in basic knowledge, skills and attitudes appear or at least when they become acute.

This alone makes it obvious that education always implies both personality development and training and that no distinction can or ought to be drawn between the two.

2. Vocational education comprises and co-ordinates the existing upper stages of all types of secondary school, all vocational training colleges and all institutes of higher education. It is the second phase of full-time education, the period in a person's life which precedes his choice of a career. All such choices, however, now become very provisional decisions open, as far as possible, to revision at any time. The notion of occupation therefore needs to be redefined; it would appear that it should rather be interpreted as a vocation, though an individual one which is not final. If, for the reasons mentioned above, we wish to avoid laying down a collective educational ideal, then we find ourselves unavoidably faced with innumerable individual or group ideals which seem scarcely apprehensible owing to their widely varying superimposed and interwoven levels of consciousness. But we still recognise the principle of individual liberty based on human rights; while freedom of the person gives rise to too many variations to permit of a universally valid educational ideal, it remains an important goal of education. In this sense, education is "learning to be free". Any kind of freedom, even educational freedom, must be learned. And the general process of learning is, as we have seen, a lifelong process. Life and learning thus become almost identical concepts. And it is in this process that we increase in legitimate freedom and perhaps come to recognise more clearly our personal vocation.

These ideas are not excitingly original. What is perhaps new is the attempt to translate this heuristic-inductive thinking into an educational system and thus, as it were, enable it to take shape. In doing so we have brought the third category in our outline, "Recurrent education" and also the fourth "Shaping of life to a cultural pattern", into our discussion of the problems of occupation and vocation, which we shall now pursue in a little greater detail.

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IV. Occupation and vocation

If one's occupation is nothing more than a means of earning a living, then leisure time is the sole source of meaning and contentedness in life. We enjoy only limited freedom in our occupation. It is therefore in almost everyone's interest to increase production and shorten working hours. Education, too, is affected by this compensatory splitting of the personality between our jobs and our lives. We train for our career as quickly as possible. Our leisure time can be quickening or deadening as we choose. No one will deny that the situation as described represents at least part of the situation today, but conditions of course are continuing to change. As the process of total automation develops, industrial society is becoming post-industrial society and, even as this trend begins, "training" is acquiring new dimensions. There is no further place for narrow specialists. There is a new need for breadth of vision and judgment, in other words culture. Added to this, occupations are subject to increasingly rapid change and ultimately no longer correspond to any standard training programme. Systematic provision must therefore be made for further education, refresher training and retraining to be constantly available. The outlook of the one-sided specialist is a hindrance to permanent education. The demand for education generally grows with education itself. It must be encouraged by making educational opportunities and facilities as freely available as possible at all times.

Existing forms of leave for training purposes are in many respects unsatisfactory. If we wish to prove the leading place to be occupied by education today as a form of investment, in social and cultural as well as economic policy, then we must attempt to build it, further (recurrent) education included, into our social security systems.

In the Scandinavian countries, among others, there are already some interesting developments which go beyond the more widespread privately sponsored schemes for the staff of single firms or groups. These schemes usually suffer from the disadvantage of providing only those forms of further training or retraining which further the firm's or group's interests. It will therefore have to be the state's responsibility to secure the right to lifelong education in accordance with individual needs and to make suitable opportunities and facilities generally available. The financial problem is probably less serious than is feared, assuming of course that we can make up our minds to an overall educational plan that will make it possible to reduce somewhat the preponderance of investment in the pre-work sector in order to develop the institutionalised para-vocational education that is now required, i.e. new style adult education.

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V. Cost-benefit relation

When we come to assess the need we are obliged to recognise that a very considerable proportion of our present educational investment is quite inexcusably misplaced. For the learning dispensed in some of our expensive secondary and higher teaching establishments, not to mention the institutes of adult education, is often stale in both content and method and no longer of much use to anyone. A great saving could be made here.

There is another, almost more serious, form of wrong educational investment: it concerns those persons who, from a false sense of pride or exaggerated self-assurance or as a result of misguidance, demand too much or, rather inappropriate education or of whom, for similar reasons, too much or inappropriate education is expected. This, frequent as it is, often leads to cultural sclerosis and even to the disintegration of the personality. An immediate effect of making education democratic has of course been to produce a general lack of self-criticism. Excessive self-esteem is certainly to some extent a natural part of self-preservation. False guidance therefore takes more apparent and acute forms in a relatively free, dynamic social order than in an established hierarchical system. It is true that our society is in a sense suffering from a lack of proper exploitation of latent reserves of intelligence; but at the same time it is plagued by the educational sclerosis we have mentioned, which is the bane of the over-educated and the exaggeratedly, or more accurately, the inappropriately educated. Such people are probably unhappy for the most part; and more and more of them are unsuccessful, colourless people lacking in personality: the nonentities of mass society.

VI. Moderation and freedom

Thus what we obviously need for the welfare of all of us is an all-embracing system of education which gives each individual, practically without constraint, the opportunity of lifelong education that will suit him. There are two interrelated considerations to be examined here: what is suitable and relevant and how to avoid constraint.

1. The suitability (relevance) of education can be theoretically checked against three reference points:

(a) What is a person able to learn? (No one should undertake or be made to undertake anything for which he is unfitted. No one should live or have to live in conflict with his talents. Everyone should be able to exploit as many of his capacities as possible.)

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(b) What does he want to learn? (No one should be driven by excessive motivation or "manipulation"; everyone should be able to learn what he wants, or believes he wants, and what he is interested in.)

(c) What does he need to know? (No one should unwittingly do useless work. Everyone should be able to direct his efforts with a view to the labour market and find an outlet for them.)

These three reference points are certainly definable in each case by existing scientific methods, and tests. But their systematic general application does not appear to justify the effort and expense involved. The process of guidance, which must take the place of the elimination process, is scientifically identifiable in isolated case studies only whilst its generalisation turns out to be identical with education itself. This means, more or less, that career counselling equals education and every form of education has by its very nature the effect of influencing the choice of career: guidance is education and education is guidance. The guidance mechanism must therefore represent more than ever an inherent and vital part of the education system. Such guidance will not stop at career counselling, but will include help with the problems of life and difficulties of interpretation, not forgetting that states of "happiness" and "crisis" may produce motivations if they remain functional and do not wreck the system. The "industrial climate", which is a factor of production, consists in constantly surmounting crises. Culture today is increasingly "industrial", and on the other hand we need to instil as much culture as possible into industry.

In a permanent education system, training without culture, without "climate", is quite inconceivable, as is culture without training, without specialised technical skill. This gives us at least a glimpse of what man is to be, though a positive picture can be indicated only in rough outline. One would have to speak of a "cultured specialist". That does not go very far, but it does show us what we do not want or need: neither a philistine with a specialist veneer, nor a dilettante culture vulture - the principal products, somehow of contemporary education systems. These systems must be changed for permanent education aims to produce an integrated man and to mature each person as far as possible into a personality.

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If all the fields of occupation of this generation and the next could be classified, it would be possible to deduce a pattern for education. There would be a broadly-based common trunk of programmes branching off into smaller and gradually more specified sub-systems. Both the common trunk and the branches would however have to consist of very small credit-units offering the maximum possible number of combinations and permutations. Such an accumulative credit system would in theory enable every individual to follow an appropriate lifelong course of education by combining the appropriate type and number of units according to ability, interest and need.

Only such a system could take account of the constant changes in individual aptitudes and aspirations and the continual variation in what is needed. Education would then no longer be founded on a rigid canon of subject matter which quickly lost contact with society and with life; it would be specifically motivated by the need to solve a particular problem or a definable set of problems. Personality grows not so much on subject-matter as on problems. Several persons or groups of persons may have parts to play. This method is already universal in the scientific field. Very involved development projects are carried out by means of multidisciplinary systems engineering. This brings back into play an old teaching principle: education starts not in an unfamiliar subject-matter but in a problem which each individual feels as his own, one which he can interpret in his own fashion and which he is prepared to make his own particular contribution towards solving. Permanent education will remain a Utopia until it learns how to exploit this inner motivation of each individual in its structures and methods. And this in its turn can only be achieved when our school systems, which to a great extent still concentrate on subject-matter, in opposition to life, are changed in such a way as to evoke and exercise this vital and natural incentive instead of stunting it.

2. Absence of constraint in education

From here we might go on to say that the only legitimate form of compulsion in education is, so to speak, the setting of a problem. But our teachers continually make the mistake of trying to impose their problems on us, instead of attempting to understand our problems and make us aware of them.

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Education is not an independent phenomenon which exists outside a person and which can simply be grafted on to him. It can only exist inside a person. An attempt by the teacher to transfer his own education to his pupils must therefore inevitably result either in failure, in miseducation or in resistance and protest. The teacher's task is not to transfer or impose education but to awaken curiosity, offer guidance, enable the pupil to discover learning and let it grow in him. The exercise of authority is generally the opposite of any educational process. This does not mean that the functional system in a dynamic social order, and with it the permanent education system, can do completely without authority. But it may mean that authority is only legitimate so long as it is, as it were, in a continuous and conscious state of crisis and in this situation repeatedly proves its worth. The state of affairs with which we are quite familiar in political life is now penetrating by way of adult education into the sphere of formal education.

For permanent education does not mean, as many people still suppose, the prolongation of schooling or yet the absorption of dilettante adult education into a continuing school system; on the contrary, it demands that professional responsibility should be conferred and accepted as early as possible. This will tend to reduce paternalistic and protective compulsory schooling unrelated to daily life and work, and to make our schools more flexible, differentiated and democratic, with greater regard for the individual and more intimately connected with work and life, as modern adult education requires.

This trend too has its limits, of course. One cannot apply adult education techniques to five or ten year olds. Periods of imitation can occasionally be very productive educationally. In aiming higher mentally we should not immediately betray all our instincts. Examples will therefore continue to be, at least in principle. Even adults require them. Who can claim to be completely independent in all spheres of life?

VII. Guidance and evaluation

There must of course be a place, in permanent education, for the influence of parents on children of pre-school age, even if this jeopardises the principle of an equal start for all. To counter this danger, we must - principally for reasons of social and educational policy - institutionalise nursery schools and make them all part of the education system. Even at this level there will be new "programme units" for individual groups. There will then be a perfectly smooth transition to

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primary school. It will be possible to branch off at the end of the general primary stage. From then on, "credit units" can be combined and accumulated with increasing flexibility and variety. On purely organisational grounds individual subject aggregates will probably be grouped together in interdisciplinary departments or "foundation subjects" rather after the fashion already adopted in the British Open University. Examinations will to a large extent be replaced by a system of continuous assessment as already applied in the field of programmed instruction, from which in fact the principle of fractional teaching units derives. The pupil should be able at any time to estimate his own progress, so that any examination serves mainly to confirm his findings instead of being the sole vehicle, and a generally unrealistic and haphazardly fateful one at that, of an artificial qualifying system. Permanent education is therefore also a means to self-knowledge and thereby self-guidance. Hence training of the faculty of judgment must begin at pre-school age and be continued and constantly developed with well-nigh "cybernetic" consistency. It will nevertheless be necessary to incorporate certain counselling aids and guiding mechanisms into the new education system if the existing system of examinations and qualifications, which has become psychologically and sociologically unworkable, is to be entirely abolished.

We have already observed that extermination is now out of the question as a means of purging the social system, for it will result in the system's collapse. This being so, we can no longer base selection on uncompromising and very often haphazard methods of elimination. A society's educational potential can moreover only be fully exploited if every member of that society is able at any time to find whatever place in the functional system is best suited to him. It is important and relevant to each and all of us that everyone should be able to follow the career that is most appropriate. If we put a man in the wrong place he suffers, and we with him. Every person who is insufficiently or wrongly guided contributes to the dysfunction of the social order. His misfortune is the misfortune of a badly organised society.

Herein lies one of the chief problems of modern educational research and planning. Information and communication theories, cybernetics, sociology and psychology must work in conjunction if the functional social system is to be equipped with a socially, economically and culturally effective guidance mechanism. Whether permanent education becomes a reality depends on our ability to create this new "ethic of self-preservation" and the new "contentedness" of mathematically precise self-knowledge and judgment.

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We choose the term "ethic" advisedly, for we believe that the most recent of humanity's great achievements, such as the moon landing, not only bear witness to astounding progress in technology and electronics, but may very well also have established a new ethic: a new conscientiousness, exactitude and realiability not only in technology but also in human co-operation and co-existence. Systems engineering can certainly not be applied immediately and directly to the whole social and education system; but it can suggest to us how extremely complex functional elements can be organised with hitherto unknown precision and reliability in such a way that the whole system - with its ever limited capacity - may, with a minimum of failure and wasted effort, attain a clearly defined common objective, pursued by all.

VIII. Dynamism and dimensions (breadth of objective)

To pursue a European educational policy, the common aims would first have to be defined and a wide consensus of opinion on them established. The national and other traditions we carry about with us, and the infinite variety of short-sighted and stubborn manifestations of individual and group self-centredness have hitherto prevented this. But in view of the fact that economic soundness today calls for ever greater dynamism and larger scales, group selfishness becomes increasingly dysfunctional.

Leaving aside the "flower children" one may say that economic progress is still generally regarded as desirable. But whoever favours such progress must also, in order to safeguard it, favour a highly democratic, socially and culturally mobile and dynamic education system. A spirit of enterprise must determine our new education, which must in turn produce such a spirit and constantly recreate and nurture it. Changes of role, group dynamics and modulation of authority must therefore be features of education and not merely of politics and daily life.

If we are to take the "flower children" into account then our faith in progress must leave room for a degree of irony. This may be a suitable way of tempering the acute feverishness and blindness that always accompany progress. Permanent education ought indeed always to offer both advancement and "savoir vivre" at the same time.

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IX. Advanced educational technology

We have already seen what features and structures appear capable of achieving this. We also know that we must not start from the academic sub-culture so typical of Europe; if we are to achieve our objective we must make a completely new beginning. Some details of the new system are still of course unclear. But it would be fairly simple to transform the vague overall picture into a vision of the future in which there were no more schools out of touch with life and no more "masters" but instead a dense network of comprehensive educational "self-service establishments" and cultural centres with electronic linkage where each individual would at any time receive the education appropriate to him: a single all-embracing multi-media system, where each person was so to speak both teacher and pupil, this apparent paradox being resolved by means of educational technology. This technology of the future would be capable of delivering any desired form of education to any address on demand. A private student on a correspondence course could in this way be linked up with all important sources of information. One may nevertheless assume that group work would be given increasing precedence, not only for the sake of a more rational infrastructure but also with a view to community development: in the sense both of the progress of the community and the performance in common of collective tasks.

This would finally lead to a merging of education and work, of training and occupation; both would become a source of pleasure, provided one took a personal interest in a task that "makes sense". This would lead to a state of affairs not dissimilar to the situation before schools were created, when a son learned everything from his father simply by having to lend a hand from an early age. Even then however paternalism was in no way institutionalised. For what the son did not learn from the father, the father learned from the son. The family was truly a functional system in the permanent education sense. Education was dispensed not by means of abstract schooling but by actual living, by working together. Education was work and work was education: in that respect the comparison with modern trends is justified. Even the problem of leave for educational purposes could be solved along these lines. Only the numbers and dimensions involved have increased tremendously, and the "tools" have become infinitely more complicated and expensive: so much so that to supply them all at a local, regional or even national level is usually quite out of the question. So far all European multi-media experiments - i.e. teaching and learning systems which combine several media and methods, such as television, correspondence exercises with programmed material, computer-assisted instruction, group work and practical work - prove

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that such technologically sophisticated systems of education and work become economic propositions only when planned, installed and maintained on a, let us say, continental scale. But then they are more efficient and economic than all other systems. This very topical problem, the "scale problem", affects all rather complicated and costly organisations.

We no longer need therefore to engage in propaganda in favour of European integration. Integration will be forced upon us by technology. The alternative is Europe's scientific and hence also economic, decline.

We must not however overlook the fact that to establish a European educational and production network based on electronic technology will solve no more than half of the problem - and probably only the second half, not the first. For above all we require common educational and work programmes (software). These do not exist, and will not appear of their own accord: we must co-operate in producing them.

It has so far been thought that the traditional national syllabuses could gradually be mutually adjusted and harmonised. But now we see that here too a fresh start must be made. This does after all have the advantage that by new programming, in very small units related to actual problems and needs, the mistakes of the old programmes can be abandoned and nothing need be repeated which is obsolete and therefore no longer in demand.

The new programmes will have to comply as far as possible with all the numerous principles and requirements already mentioned. They will have to be very varied, not only in level and intensity but also in their adaptability to different methods, for example home study and group work. For even the methods of work should be left to the individual's free choice as early as possible. This example also shows the functional nature, in two senses, of all the "freedoms" built into the permanent education system: they aim at an increase in output while also contributing to the happiest possible development of the personality by helping to banish unnecessary strain and tension. This is especially true of the free choice of the right method for each individual.

We shall have to reserve our freedom to decide and choose in each case between "student - system interface" (confrontation with the machine, if necessary with a go-between linking student to apparatus and vice versa) and "face to face" (a human relationship in the form of dialogue, discussion group, class, team, etc.). The "combined method", for which multi-media systems

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were created, might indeed prove the most acceptable and effective, partly because it allows the greatest flexibility in individual combinations of small programme units and also for a psychological reason: it depends more on the student's personal situation and attitude than on the specific educational problem to be solved and the consequent subject matter to be assimilated whether he prefers machine to man or man to machine. In most cases he will, as already mentioned, choose a combination of the two; and then it must be remembered that in student - system interface the "master" is not behind the machine but in front. In all social orders in which coercion and brute force still prevail, this statement is obviously vain.

But when we speak of permanent education we do not mean any kind of educational system for a coercive and brutal society. Indeed, we must from now on convert our engines of destruction into machines for education, if we want to survive.

The machine has been brought into disrepute by using it as an instrument of power, not of education. The pre-eminent educational question of the right man in the right place in the functional social system ultimately raises the very pertinent question of the need for permanent education against tyrants: every one of us must constantly learn to resist domination and the temptation to dominate.

The use of modern educational technology makes it even more imperative for us to avoid being insidiously seduced by power or into power. However ill-founded our fear of technology may be, our fear of technocracy may be all the more justified. The nightmare vision of George Orwell has shown us that the danger does not in fact proceed from the machine; it comes from the person who is capable of using the machine as an instrument of political power, and from all those who submit uncritically to the dictatorship of taste and fashion first of all and finally to dictatorship pure and simple.

Technology and the functional system in general can and ought therefore to be merely a means to an end and not become a technocratic end in themselves. As long as permanent education is a search for new educational aims and contents it goes beyond the McLuhan theses "the medium is the message" and beyond all concepts based on goals inherent in the system.

The creation of a permanent education system will not be possible without advanced educational technology. And such technology, unless founded on permanent education as a structural principle and as a heuristic form of democratic educational organisation, will either lose its meaning and aim or will become an end in itself and thereby a source of annoyance and danger to our free social order. This shows how important it is that in all educational questions a sharp distinction should always be drawn between organisation or structure, method or technology and content or aim.

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Precisely because it is nowadays so difficult, or practically impossible, to give a more or less objective, generally valid and conclusive definition of aims and contents, and because we must in fact take care not just to anticipate them, we are always in danger of absorbing or concealing them in structures or methods instead of making structures flexible so that the contents and aims are free to develop and to clarify and our technology can be gradually and more exactly adjusted to them.

The European continent, even if united, is in this respect at a disadvantage compared with large and equally highly developed areas, such as the United States of America, and also, surprisingly enough, in relation to underdeveloped areas which, like the United States, are relatively homogeneous and welcome investment. For both lend themselves to structural alterations carried out by the most modern technological means, in fact they have need of such means and of such alterations. In Europe we seem to be faced with almost insuperable difficulties. Until recently a few countries and regions were fairly highly developed technologically. The infrastructure is therefore very fragmentary, heterogeneous and insufficient, and in many respects it is out-of-date. It has been kept artificially alive in varying degrees by continuous, fairly costly adaptation, making the superimposition of a new overall structure hard to justify for investment reasons alone.

There is a discrepancy in Europe between, on the one hand, national and regional planning, which is sometimes not just short-term but also short-sighted and often downright reactionary, and, on the other hand, the long-term international planning that is now being more and more demanded. This discrepancy is bound to lead to disaster unless we succeed within the next few years in establishing definite long-term plans, at least in cultural policy and technology, in adjusting the short-term planning of all administrative units so as to co-ordinate it with long-range forecasts and in thus achieving medium-term aims and overcoming the discrepancy.

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